STATE OF SOUTH CAROLINA

BEFORE THE PUBLIC SERVICE COMMISSION

In re: Application of Duke Energy Carolinas, LLC For Approval of Proposed Electric Transportation Pilot and An Accounting Order to Defer Capital and Operating Expenses	)))))	Docket No. 2018-321-E
In re: Application of Duke Energy Progress, LLC For Approval of Proposed Electric Transportation Pilot and An Accounting Order to Defer Capital and Operating Expenses	))))	Docket No. 2018-322-E (Not Consolidated)

COMMENTS OF CHARGEPOINT, INC

I. INTRODUCTION

Consistent with Order No. 2018-179H and Order No. 2018-181H issued by the Public Service Commission of South Carolina ("Commission") in the above-captioned proceedings, ChargePoint, Inc. ("ChargePoint") thanks the Commission for the opportunity to provide these comments regarding proposed transportation electrification pilots ("ET Pilots") submitted by Duke Energy Progress ("DEP") and Duke Energy Carolinas ("DEC") (together, the "Companies"). The Companies' ET Pilots come before the Commission at a point of significant growth in the electric vehicle ("EV") market in South Carolina and nationally. In reviewing utility initiatives in the EV space, state utility commissions across the country are considering how best to prepare for and leverage the benefits of greater electrification of the transportation sector.

ChargePoint is the leading electric vehicle charging network in the world, with charging solutions for every charging need and all the places EV drivers go: at home, work, around town, and on the road. With more than 57,000 independently owned charging spots, including over 130 public stations in South Carolina, ChargePoint has thousands of customers – including workplaces, cities, retailers, apartments, hospitals, and fleets.

ChargePoint is the only charging technology company on the market that designs, develops, and manufactures hardware and software solutions across every market segment. Hardware offerings include Level 2 and DC fast charging products, and ChargePoint provides a range of options across those charging levels for specific use cases. ChargePoint's software and cloud capabilities enable site hosts to control the charging services onsite and provide easy use for EV drivers, including features like waitlists, access controls, charging analytics, and real-time availability. Leading EV charging hardware providers, automakers, and other partners rely on the ChargePoint network to make charging station details available in mobile apps, online, and in navigation systems for popular EVs. ChargePoint drivers have completed more than 47 million charging sessions, saving upwards of 49 million gallons of fuel, and driving more than 1.1 billion electric miles.

A map of ChargePoint publicly available charging locations in the State of South Carolina is featured below in Figure 1.[1] ChargePoint customers in South Carolina include Tanger Outlets, BMW, Clemson University, Whole Foods, and Jaguar Land Rover. A number of customers also invest in charging stations onsite with private access controls.

Figure 1. ChargePoint publicly accessible charging ports in South Carolina.

[1] The number in each circle in Figure 1 represents the number of charging ports in that area. The number may include ports on multiple different sites.

In ChargePoint's business model, the company sells its smart, networked charging station equipment directly to site hosts, and site hosts own and operate the charging stations on their properties. For a subscription, ChargePoint provides charging network services, or data-driven and cloud-enabled capabilities that enable site hosts to better manage their charging assets and optimize services. For example, with those network capabilities, site hosts can view data on charging station utilization, frequency and duration of charging sessions, set access controls to the stations, and set pricing for charging services. These features are designed to maximize utilization and align the EV driver experience with the specific use case associated with the particular site host. In addition, we have designed the network to also allow other parties, such as electric utilities, the ability to access charging data and conduct load management to enable efficient EV load integration with the grid.

II. SUMMARY OF COMMENTS

ChargePoint offers these comments in support of certain programs described in the Companies' respective ET Pilot applications.[2] In supporting those programs, ChargePoint presents a range of best practices for utility EV charging programs for the Commission's consideration. First, ChargePoint details its principles for any regulated utility investment in electric vehicle charging infrastructure. Second, these comments will provide a summary of the proposed ET Pilot programs that offer a rebate structure. Last, ChargePoint will show how the proposed rebate programs align with ChargePoint's principles for utility investment. ChargePoint will further show how specific programs in the ET Pilots support the competitive market for EV charging in South Carolina and mitigate risk to ratepayers in facilitating deployment of transportation electrification products.

[2] ChargePoint does not offer any comments on the Companies' proposals related to DC Fast Charging Station Programs at this time, but reserves all of its rights and privileges associated with commenting on these proposals at a later time in the above-captioned proceedings.

III. PRINCIPLES SUPPORTING UTILITY INVESTMENT IN EV CHARGING INFRASTRUCTURE

Nationally, utilities in many jurisdictions have supported the adoption of electric vehicles through programs that enable the build out of networked charging infrastructure across a range of use cases. Those programs can significantly lower barriers to EV charging infrastructure deployment and accelerate EV charging markets overall. Most importantly, utility investment in charging infrastructure can catalyze and foster a long-term, scalable, and competitive market for charging equipment and networks. To that end, ChargePoint strongly supports utility investment in electric vehicle charging infrastructure that seeks to achieve those outcomes.

There are three primary models for utility investment in EV charging infrastructure:

1. **Ownership**: A utility procures, deploys, owns, and maintains charging infrastructure in its jurisdiction.
2. **Make-Ready**: A utility directs investments toward the *installation* of charging hardware, and more specifically, installing and maintaining the supporting electrical infrastructure on the distribution side as well as the customer side of the meter up to the connection point for the charging station. In covering this work, a utility prepares a site for installation of the charging station itself, which is purchased and operated by a the site host.
3. **Rebate-based**: A utility provides rebate incentives to site hosts, which are used toward the purchase and installation of qualifying electric vehicle charging stations onsite. Qualifications standards for charging stations can be determined to ensure capabilities that will enable grid benefits.

The right model for utility investment in EV charging markets can take many forms, and no single solution is appropriate for every jurisdiction and use case. Moreover, each segment of

the charging market – fleets, multi-unit dwellings, retail establishments, workplaces, municipalities, and corridors – has a different set of circumstances to consider the most effective investment. ChargePoint supports all three utility roles for charging and maintains that a suite of offerings may most adequately address the needs of different site hosts and uses cases. State utility commissions should ensure that programs leverage the strengths of each model, provide for program flexibility, and align investments with the most appropriate use case.

ChargePoint's experience as the leading provider of electric vehicle charging infrastructure has informed its recommendations regarding regulated utility investments in EV charging. As a result, ChargePoint has developed a set of essential principles to support successful implementation of utility programs that align the goals of the utility, competitive market participants, and end customers. Working with utilities across the country, ChargePoint has strongly supported and recommended approval of programs that promote the following principles. To the maximum extent possible, utility programs should incorporate:

a. *A core outcome to foster and support the existing competitive market for EV charging infrastructure.*

   The market for EV charging is inherently competitive and active in every state, with diverse, evolving business models and direct sales to site hosts. As the rapid pace of electric vehicle adoption continues in South Carolina and nationally, site host demand for charging infrastructure onsite has naturally increased. Long-term, that demand for EV charging is best served by a self-sustained, dynamic competitive market, as it drives down costs for consumers and advances innovative products and business models. Successful utility program designs seek to leverage existing market providers, accelerate competitive activities and opportunities, and support a sustainable, scalable market for EV charging infrastructure.

b. *Ongoing support for a diversity of competitive market offerings, allowing site hosts to continue to have a choice in charging solutions from multiple, qualified vendors of equipment and charging networks.*

Under current market conditions, site hosts have a range of choices of charging technologies and charging network providers in an active competitive market. Site hosts make their choices of solutions based on a variety of factors and circumstances, such as available network features, brand and reputation, customer service, cost, aesthetics, reliability, and more. In successful utility programs, site hosts maintain the choice that they currently have among charging equipment and network providers, so that they may choose the solution that best fits their specific needs associated with their property and use case.

c. *Site host control of charging infrastructure located on their properties, including pricing and access control, to align with their circumstances, preferences, and desired driver experience.*

Site hosts invest in EV charging stations to attract EV drivers to their sites, and through controls over access and pricing, they can optimize charging station utilization and enhance the EV driver experience. For instance, a fleet manager of EVs and a big box retailer may both have the same EV charging infrastructure, but the way that they choose to operate and manage their charging stations varies greatly. A fleet manager may want to limit access controls to only those vehicles in the fleet, while a big box retailer may allow full public access and want to charge a low fee to encourage shoppers to stay longer and charge. Programs that do not account for the site host's operational control of stations on their site may lead to market distortions around driver pricing, discourage growth of site host

engagement and investment, and potentially result in poor station utilization or negative driver experience.

d. *Stimulate private investment in charging infrastructure to ensure site hosts have "skin-in-the-game", lowering risks to ratepayer funds and making certain site hosts are invested in the success of deployments.*

As noted above, there is a natural demand for EV charging services, and private investment continues to drive installations of charging stations in every state in the nation. To the greatest extent possible, utility investment in EV charging should align with and attract private investment, requiring site hosts to be materially and financially invested in the success of deployments. Connecting site hosts to the responsibilities of charging station deployment will lead them to make decisions to maximize utilization at their sites, which will benefit the overall program. Additionally, requiring a private investment cost share will stretch and multiply investments of ratepayer funds.

e. *A requirement for all deployments to be smart, networked charging infrastructure, to maximize flexibility, control, and grid benefits.*

Utility programs recognize and maximize the benefits associated with electrification by requiring networked charging technologies in charging infrastructure programs. Smart, networked technologies enable grid benefits, as valuable charging data can be collected on each session to inform better utility planning decisions and help maintain reliability and affordability. Associated load management capabilities can also ensure that tools and features are in place to manage the growing EV load and ensure the most efficient integration into the grid. Networking can also increase station utilization by providing a service that enables

drivers to locate a charging station through mobile apps and online maps, including the ability to see if a station is currently in use by another driver.

ChargePoint believes that these principles are critical features of cohesive, complementary utility programs for EV charging infrastructure. Importantly, these principles have already been incorporated into many utility programs across the country, including approved programs in California[3], Nevada[4], Utah[5], Ohio[6], Massachusetts[7], New York[8], Rhode Island[9], and in programs

[3] *See* California Public Utilities Commission. Application 17-01-020. "Transportation Electrification Proposals Pursuant to SB 350." 2018. http://www.cpuc.ca.gov/sb350te/

[4] *See* Public Utilities Commission of Nevada. Docket No. 18-02002. "Joint Application of Nevada Power Company d/b/a NV Energy […] Electric Vehicle Infrastructure Demonstration Program for Program Year 2018-2019." June 27, 2018. http://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2015_THRU_PRESENT/2018-2/31126.pdf

[5] *See* Public Service Commission of Utah. Docket No. 16-035-36. "In the Matter of the Application of Rocky Mountain Power to Implement Programs Authorized by the Sustainable Transportation and Energy Act." June 28, 2017. https://pscdocs.utah.gov/electric/16docs/1603536/2949541603536ptrao6-28-2017.pdf

[6] *See* Public Utilities Commission of Ohio. Docket No. 16-1852-EL-SSO. "In The Matter of the Application of the Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.143."April 25, 2018. http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=1a7d9c25-92bc-42e4-896d-c888c1a015ac

[7] *See* Massachusetts Department of Public Utilities. Docket 17-05. "Order Establishing Eversource's Revenue Requirement." November 30, 2017. https://eeaonline.eea.state.ma.us/EEA/FileService/V1.4.0/FileService.Api/file/FileRoom/dehehcjj

[8] *See* New York Public Service Commission. Matter No. 17-00887. "Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Niagara Mohawk Power Corporation d/b/a National Grid for Electric Service." http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=17-E-0238

[9] *See* Rhode Island Public Utilities Commission. Docket No. 4770. "The Narragansett Electric Co. d/b/a National Grid - Application for Approval of a Change in Electric and Gas Base Distribution Rates." http://www.ripuc.org/eventsactions/docket/4770page.html

proposed in Pennsylvania[10], Washington[11], Maryland[12], Michigan[13], and Missouri.[14] Based on this record and our experience in active programs in other states, ChargePoint asserts that all three utility investment models for EV charging can and should accommodate program designs to maintain a site host's choice and control to support the current competitive market for charging. Together, these factors work to enhance the effectiveness of utility programs in electric transportation and amplify the impact of ratepayer funding.

IV. THE COMPANIES' PROPOSALS FOR REBATES FOR TRANSPORTATION ELECTRIFICATION EQUIPMENT

On October 10, 2018, the Companies proposed the ET Pilots, which contain three rebate programs designed to offset the costs of procuring electric vehicles and associated charging equipment.[15] Of the three programs addressed in these Comments, one is present in DEC's

[10] *See* Pennsylvania Public Utilities Commission. Docket Number R-2018-3000124. "Pa. PUC v. Duquesne Light Company." http://www.puc.pa.gov/pcdocs/1586084.pdf

[11] *See* Washington Utilities and Transportation Commission. Docket No. UE-180877. Tariff Revision – Puget Sound Energy. https://www.utc.wa.gov/docs/Pages/DocketLookup.aspx?FilingID=180877

[12] *See* Maryland Public Service Commission. Case No. 9478. "In the Matter of the Petition of the Electric Vehicle Workgroup for Implementation of a Statewide Electric Vehicle Portfolio." https://www.psc.state.md.us/search-results/?keyword=9478&x.x=16&x.y=13&search=all&search=case

[13] *See* Michigan Public Service Commission. Case No. U-20134. "In the matter of the application of Consumers Energy Company for authority to increase its rates for the generation and distribution of electricity and for other relief." https://mi-psc.force.com/s/case/500t0000009fPPSAA2/in-the-matter-of-the-application-of-consumers-energy-company-for-authority-to-increase-its-rates-for-the-generation-and-distribution-of-electricity-and-for-other-relief.

[14] *See* Missouri Public Service Commission. Case No. ET-2018-0132. "In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of Efficient Electrification Program. https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=ET-2018-0132&attach_id=2018012294

[15] *See* Application of Duke Energy Carolinas, LLC For Approval of Proposed Electric Transportation Pilot and An Accounting Order to Defer Capital and Operating Expenses, Docket No. 2018-321-E (Oct. 10, 2018) ("DEC Application"); Application of Duke Energy Progress, LLC For Approval of Proposed Electric Transportation Pilot and An Accounting Order to Defer Capital and Operating Expenses, Docket No. 2018-322-E (Oct. 10, 2018) ("DEP Application").

application, and the other two are found in both the Companies' applications. The three programs are:

1. Residential EV Charging Utility Management Program ("Residential Charging Program"): DEC proposes to provide a rebate to support installation of smart, networked Level 2 charging stations for up to 400 residential customers. DEC will offer quarterly participation payments to customers in exchange for utility management of installed home charging stations.[16]
2. EV School Bus Charging Station Program: The Companies propose to provide rebates to offset the cost of purchasing electric school buses and associated smart, networked charging equipment with Vehicle-to-Grid ("V2G") capabilities. The rebates are offered on a first-come, first-served basis at up to $125,000 per incentive. Under this program, DEC proposes to offer approximately 20 rebates, and DEP proposes to offer approximately 10 rebates.[17]
3. EV Transit Bus Charging Station Program: The Companies propose to provide rebates to offset the cost of procuring smart, network charging equipment associated with the separate purchase of new electric transit buses by a transit agency. In exchange for the rebate, the transit agency will allow the Company to record all vehicle charging data, and perform testing of utility-managed charging capabilities. The rebates are offered on a first-come, first-served basis at up to $55,000 per incentive. Under this program, DEC proposes to offer approximately 20 rebates, and DEP proposes to offer approximately 10 rebates.[18]

[16] *See* DEC Application at 9-10.

[17] *See* DEC Application at 10-11; DEP Application at 9-10.

[18] *See* DEC Application at 12; DEP Application at 10-11.

According to the Companies, the main goals of the ET Pilots are, among other things:

- Study the effects of charging multiple types of electric vehicles;
- Develop procedures to ensure cost-effective integration of vehicle charging by managed loads;
- Study how best to support public transit electrification and associated cost savings in South Carolina; and,
- Study how to ensure electrification projects benefit all customers, including those who do not own electric vehicles.[19]

As mentioned above in the program descriptions, the Companies intend to incent the installation of smart, networked charging infrastructure in these applications. The data collected from charging stations in the rebate-based pilots will be used to gain insights into charging load profiles, to assess the value of managed charging, and to realize grid benefits and costs savings associated with transportation electrification.

Moreover, the Companies propose to conduct market education and outreach for each program to ensure that the offerings are communicated and leveraged among customers.[20] To the extent possible, the Companies propose alignment with the State's expenditure of funds stemming from the Volkswagen Environmental Mitigation Trust, which may be spent on a range of transportation electrification projects.[21]

[19] *See* DEC Application at 3; DEP Application at 3.

[20] *See* DEC Application at 16; DEP Application at 14.

[21] *See* DEC Application at 11; DEP Application at 9-10.

V. ET PILOT REBATE PROGRAMS SUPPORT GRID BENEFITS, ALIGN WITH COMPETITIVE MARKETS, AND DELIVER CUSTOMER VALUE

ChargePoint finds that the three rebate-based offerings of the Companies' ET Pilots align with principles of utility investment in EV charging infrastructure. The rebates support transportation electrification in a manner that will enable long-term benefits for grid operation and all ratepayers. As such, ChargePoint strongly supports these programs. Each of the principles identified in Section III above is present in the programs.

a. A core outcome to foster and support the existing competitive market for EV charging infrastructure.

The rebate-based ET Pilots will lower the barriers of deployment of electric transportation, reinforcing current market dynamics and accelerating competitive market activities. Deployment of residential and bus charging infrastructure will continue in the manner it does in today's competitive market, but market participation from EV charging providers and prospective site hosts will be significantly enhanced in response to the offered incentives.

b. Ongoing support for a diversity of competitive market offerings, allowing site hosts to continue to have a choice in charging solutions from multiple, qualified vendors of equipment and networks.

The Companies' three rebate programs all mention that site hosts receiving incentives will be able to choose from a list of qualified equipment, all of which will have appropriate features capabilities for the purposes of the pilot. As such, site hosts will continue to have the ability to choose solutions that best fit their circumstances and needs, while also choosing technologies that will comply with the utilities' objectives for the program.

c. *Site host control of charging infrastructure located on their properties, including pricing and access control, to align with their circumstances, preferences, and desired driver experience.*

Under the rebate program proposals, site hosts will maintain ownership and operational control of the stations installed on their property. This will enable commercial site hosts to optimize the use the charging infrastructure according to their own operational requirements and objectives.

d. *Stimulate private investment in charging infrastructure to ensure site hosts have "skin-in-the-game", lowering risks to ratepayer funds and making certain site hosts are invested in the success of deployments.*

The Companies' rebate programs do not propose to cover all costs of electric vehicles and associated charging infrastructure, but rather intend to lower cost barriers for these technologies. Accordingly, site hosts are required to cover costs in excess of the caps set in the program. This cost sharing component of the rebate programs will attract engaged site hosts who are financially invested in the success of the deployment.

e. *A requirement for all deployments to be smart, networked charging infrastructure, to maximize flexibility, control, and grid benefits.*

The Companies' proposal offers opportunities for deployment of smart, networked charging infrastructure exclusively, and contains several provisions for leveraging the data from smart charging. Those provisions include the utility-managed charging planned for Residential EV Charging and EV Transit Bus Charging Station programs, as well as V2G technologies envisioned for the EV School Bus Program. Data derived from incented smart charging infrastructure will be used to

inform grid management, and advanced capabilities will be tested to assess and capture system-wide grid benefits.

VI. RECOMMENDATION AND CONCLUSION

ChargePoint supports the Companies' rebate-based ET Pilots and recommends the Commission approve those programs. ChargePoint believes that the Residential Charging Program, EV School Bus Program, and EV Transit Bus Charging Station Program would support the competitive market for charging infrastructure, advance the EV market, and gain insights into the grid benefits of EV charging for all ratepayers. ChargePoint looks forward to participating and contributing to discussions with other interested parties and stakeholders on how to achieve beneficial transportation electrification.

Respectfully submitted this 10th day of December, 2018.

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